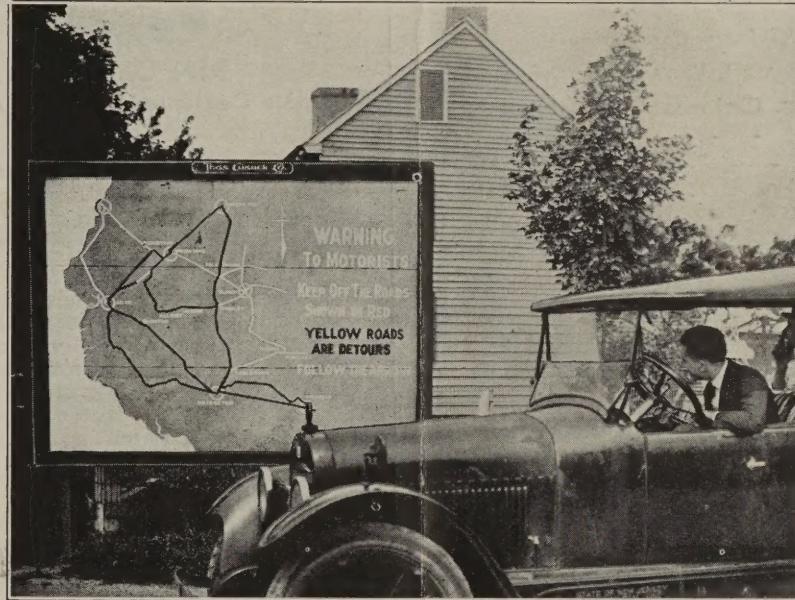


# The Highwayman

The new road at Budd Lake, Route 5

**The Highwayman Is Out  
for More and Better Roads  
in New Jersey**

**September 1922  
Vol. II  
No. 2**



## WHERE DO WE GO FROM HERE?

Here is one of the new road signs which will mean something to the motorist. They show plainly what roads are under construction and where the detours start from and go to. We think you will agree that this is a big improvement over the old system which merely told you to "Follow the Arrow."

## We're Doing What We Can But We Can't Go Far Without YOU

There is one thing in this issue of the HIGHWAYMAN that you should read.

It is the letter from J. H. Pearsall, of Westfield, on page 6.

I have never met this man Pearsall—don't know him from J. Pierpont Morgan, or Harry Kemp, the hobo poet. But I sure do like his style. Because he shoots from the hip, and makes a hit every shot.

Mr. Pearsall's letter is full of suggestions that are full of meat. Everyone of them, if put into effect, would help to better our State's Highways. But your Highway Commission, by itself, has not the authority to carry them out. Its jurisdiction does not extend beyond the Highway's right-of-way.

But public opinion and public practice do extend beyond the highway right-of-way.

They can remove objectionable signs; and they can keep the roadways clean. As for road

signs, the present Highway Commission has done more to help the motorist in this respect than has ever been done before, so far as I know, in this or any other State.

I believe it is literally true that every member of the Highway Department, and every employee, down to the last man, is proud of New Jersey's present road system, and doing his best to make it second to no other road system in the world.

Let every motorist in New Jersey take equal pride in our roads, and use his personal influence in the direction of "More roads and better roads for New Jersey."

Your Highway Department is doing what it can, but it must have your backing.

*The Highwayman*

# The Highwayman

## The Highwayman

Published Monthly By The  
State Highway Department, at Trenton, N. J.

The HIGHWAYMAN will be sent free upon application  
to any citizen of New Jersey who is interested in  
"More and Better Roads For New Jersey!"

### THE HIGHWAYMAN

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### Another Reason Why Good Roads Pay

Here is a thought for the chap who admits that good roads are important, but who contends that they make taxes too high.

In addition to the saving in operation—gasoline, tire, wear, etc.—that good roads effect, they also increase property values to such an extent that they often repay the entire cost of construction on this basis alone.

Read the following, by Samuel Hopkins Adams, and think it over:

#### "WHEELS AND THE LAND"

"The value of land is in inverse ratio to the amount of gasoline required to reach it."

"Should gasoline, by some miracle, abruptly lose its explosiveness, what values would be most radically affected? Manufacturing, at first thought, would seem to be the worst sufferer, and next to that finance, which backs the motor industry, yet the combined injury to the two would be insignificant compared to the cataclysmic disaster to real estate values. Except in the great centers these are now actually predicated upon the motor car. Imagine a small city permanently cut off from motor transportation, how long would be required for it to become a deserted village? Nowhere has there been a more profitable, healthful and valuable development in American life than the suburb. The automobile is the main agency of this growth. It would be difficult to over-estimate the influence of the cheap and effective car upon the business efficiency and individual happiness in the agricultural districts. Drain the world of gasoline and there would be a crash in real estate values beside which the worst financial panics would be unimportant."



**Mr. Chester A. Burn**

Division Construction Engineer, Northern Division

"Chet" (for Chester A.) was born at Streets Gap, Penna., on January 9th, 1886, but soon decided that Pennsylvania was not big enough to hold all the roads he was going to build, so, at the early age of 13 or thereabouts, he emigrated to a regular state.

He is a product of Montclair High School. After taking a course in Civil Engineering, he took up his duties with the Town of Montclair, and was connected with the engineering force of that municipality, for more than ten years. Later he was connected with D. L. & W. R. R. Then he accepted a position as superintendent of construction with a large contracting firm.

In 1917 he joined the forces of the State Highway Department as Resident Engineer. After two years he was promoted to the position of Assistant Supervisor of State Labor; and subsequently to the position of Supervisor of State Labor. He held this latter position for two years, and last December his efforts were rewarded suitably when he was assigned to the position of Division Construction Engineer of the Northern Division.

The above photograph was snapped while a contractor was trying to tell him how the work could be done better, by NOT following the specifications, and you can guess for yourself just how much that bird was able to get away with.



### HUMPH

Henrietta—"Now that I have my new car, I think I'll look for a husband. What kind would you advise me to look out for?"

Charlotte—"You let husbands alone, my dear—it's asking for trouble—you get a single man."



### The Colonel Collects Another Pair of Ponies

Col. Whittemore, even though now a State official, does not lose his love for attending vendues, a habit he formed when he first became a resident of Sussex County, and a custom that always interests him. He was numbered among the large attendance at the Charles Curren sale recently, and was the highest bidder on a span of horses, the pair being "knocked down" to him for the modest sum of \$500. The Col. bought them for his individual use, and has scheduled them as his colts.

# of New Jersey

3



**R. Earle Leonard**  
Correspondence Clerk

R. Earle Leonard, better known as Earle, was born in Hedsboro, New Jersey, May 12, 1898. In the course of a few years he had developed into a bouncing, beautiful blonde, and he still remains the unparalleled Beau Brummel of Bordentown and the Broad St. Bank Building. Upon graduating from the Bordentown High School in 1917 he accepted a position with the Department of Motor Vehicles under Commissioner William L. Dill. He was connected with this Department until June 1st, 1919, when he was transferred to the Highway Department and appointed to the position of Assistant Business Agent, in the Purchasing Department. On August 3rd, 1920, Earle was appointed Correspondence Clerk, or guardian angel over all incoming and outgoing mail, which position he still retains. Earle has just recently been appointed a Special Motor Vehicle Inspector—so watch your step boys (or rather your speedometer) when driving through the thriving metropolis of Bordentown, lest Earle hands you a ticket.



## The Second Convention Keep It In Mind

"It certainly feels good to have the inquiries from so many contractors and material men for the dates of the second Annual Convention of the State Highway Department", said Mr. Grover, Chairman of the Arrangements Committee, when asked for a story on the progress of convention plans. "It makes the Committee feel that the outsiders realize what a big task lies ahead of the Committee, and that there is a healthy interest in the Convention."

The energy already displayed by the Arrangements Committee, augurs an even "greater and better" success than last year. Some say that it can't be done, but there doesn't appear to be the phrase "can't be done" in the Highway Dictionary.

The management of the Stacy-Trent Hotel has already set down the dates February 14th to February 17th, inclusive, as Highway Convention time, with the "sub-rosa" estimate of 1,000. Mr. Wicks, the manager, says, "the more, the merrier", and HE KNOWS.

The added feature this coming year will be the exhibits of manufacturers and dealers in highway products. Spaces are being filled in the order of "first come, first served", and the "early bird gets the worm", when it comes to choice locations. Inquiries should be addressed to Mr. A. Lee Grover, Chairman Committee on Arrangements, or the Secretary Mr. Charles Fishberg.



"Curves make women angelic" says an enthusiast. They also make angels of speeders.—*Baltimore Sun*.

## NEW JERSEY STATE HIGHWAY DEPARTMENT

August 1, 1922

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*The State Highway Commission*

and

THOMAS J. WASSER, *State Highway Engineer*

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### TESTING LABORATORY

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J. G. BRAGG - - - - *Senior Testing Engineer*  
F. H. BAUMANN - - - - *Senior Testing Chemist*

## Home Roads And The County Engineer

BY JAMES W. BROOKS

Director, American Highway Educational Bureau

Home roads, like home folks, have a fixed place in our hearts. Broad highways, with their glitter of equipage and never-ending lines of travel in quest of gold and pleasure, are fundamentally of no greater importance to this Republic than the home road.

Consider the home road in its potential value as a factor in prosperous and contented life. At the crest of a hill in western Maryland, the other day, our car came to a stop. In distant valleys, as far as the eye could reach, farmers were afield with plow, harrow and planter.

Connecting the wide expanse of farms, that lay before us, was a net-work of home roads, embracing perhaps about twenty miles in total community thoroughfare. For the most part they were in primitive condition, minus stumps to be true, but full of ruts and holes that took toll in wear and power in each passing wagon and car. In that toll—was embodied an inexcusable waste on that expanse of farming country.

It is not enough to improve the main road. The by-road also must be brought up to a higher standard of efficiency. To the county engineer falls this great privilege and opportunity. His field of effort is in many respects ideal. He is with home folks on home roads, and his recompense and public approbation will be in direct proportion to the success which he achieves in reducing community loss through the reconstruction of time-wasting and farm restricting roads.

As an important factor in public service, the day of the county engineer has arrived, and in order that he may accomplish the greatest good for his people, he should be given unstinted support, both moral and financial, in the work entrusted to his hands.

# The Highwayman

And here is "Pete" Staub himself. He is sometimes referred to as "the sand wizard" among New Jersey contractors. If



you want to find out the secrets of just how he does it, read the interesting article below.

## About a Contractor with Sand Enough to Build Roads

By J. G. Bragg, Senior Testing Engineer.

Apparently each of our New Jersey contractors has one or more hobbies. Some play golf, some play poker, and others play \_\_\_\_\_. When winter comes along some of them go to Florida, and others lay in a supply of shovels and pray for snow. "Pete" Staub may do any or all of the above; but, he uses them as a smoke screen only. His really hobby is SAND. It is reported by natives of South Jersey that he may be seen on winter nights, riding through the air on a shovel, toting one or more bags filled with run-of-bank samples. To date, it is not definitely known whether "Pete" locates a sand pit and then has a road built near it, or locates a road and transplants his pit. However, it is certain that in at least four cases he has built roads, obtaining all of his sand, and sometimes a good portion of his gravel, from uncharted sources. Until quite recently he has been permitted to leave his shovel prints in the sands of Jersey without attracting particular attention to himself. However, his most recent exploit on Route 6, Section 6, Mullica Hill-Old Mans Creek, is of such a character as to drive us to expose him to the Commercial Sand Producers Fraternity of New Jersey. On the above named project, he proceeded as follows:

First he secured a nice level valley within easy commuting distance of the above job, and placed it within the angle of two small converging streams. To provide shade and a certain measure of privacy, he arranged a wooded hill on the westerly side of the valley. On the easterly side he considered it convenient to have a railroad, and so he had it. On the southerly side across the stream from his valley, he found it quite handy to have a road upon which to locate his office, provide an inlet for Highway Officials and other friends; and an exit for concrete materials and Commercial Producers of same. On the remaining side of his valley, he stationed a medium size knoll composed of sand, gravel and a small percentage of clay. At the base of this knoll he erected a thoroughly practical washery with which he has laun-

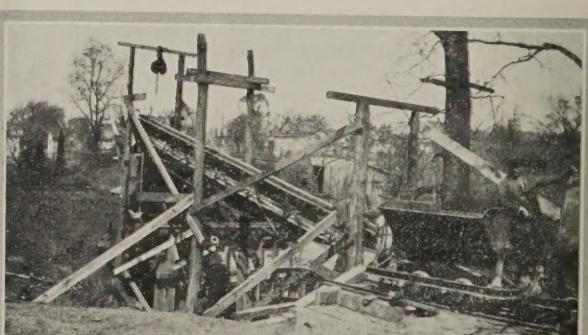
dered a considerable portion of said knoll. The remainder of his valley, with the exception of that portion which he allotted to the parking of Inspecting Officials' automobiles, he devoted to the installation of a small industrial railroad, a stock pile of sand and gravel, a three-drum Lingerwood hoist and a central loading plant.

Having thus set the stage for the application of certain natural resources to the convenience of one "Pete" Staub, he located the entire works close enough to Mullica Hill to insure himself ample police and fire protection; and, it is believed sufficiently far away to avoid noise and other inconveniences of that bustling metropolis.

The accompanying photographs show generally the layout of this plant, which has an average daily output of about two hundred and fifty (250) tons of sand and gravel, approximately sixty per cent (60%) of which is sand. Of the gravel produced, a considerable quantity is rejected as oversize or undersize material, with the result that about two-thirds (2-3) of the acceptable material is sand, the other one-third (1-3) being gravel of "concrete" size. The material supply is therefore supplemented by railroad shipments of gravel, the cars being unloaded through a trestle into a stock pile. The gravel is transferred to the batch boxes on the trucks by means of a thirty-seven (37) horse-power Haas gasoline loader.

The cement house is located between the loading plant at the washery and the gravel stock pile at the railroad siding.

Due to an excess of organic matter in the upper portion of the material deposit, it has been found necessary to strip this pit to a considerable depth. The stripping is done by an Erie steam clamshell digger mounted on caterpillar treads. By means of this digger, the raw materials are then placed into tip-over cars of one and one-quarter (1 1/4) cubic yards capacity, which are horse drawn to the dumping pit from which the materials are conveyed to the washery on a twenty inch (20 in.) belt conveyer approximately fifty feet (50 ft.) long. Material is screened



Here is a general view of "Staub's Valley" showing shovel used in mining the raw material (at right). Tip-over cars at dumping pit, and belt conveyor leading to hopper on washery.



Another view of the belt conveyor showing tip-over car ready to dump material onto traveling belt. The plant is so ar-

ranged as to require a minimum of hand labor in preparing the material for use.

by means of a sixteen foot (16 ft.) rotary screen, having one-half inch and two inch ( $\frac{1}{2}$  in. & 2 in.) circular openings. The one-half inch ( $\frac{1}{2}$  in.) screen is jacketed with a one-quarter inch ( $\frac{1}{4}$  in.) square mesh screen to separate the sand from the gravel. This method of installation permits the removal of excess fine gravel ( $\frac{1}{2}$  in.  $\frac{1}{4}$  in.), any excess of such material being diverted to a separate bin.

The scrubbing water is obtained from one of the two small streams by means of a fifty (50) horse-power boiler, operating a four inch (4 in.) Worthington pump direct through a three inch (3 in.) spray pipe-line discharging into the screens and hopper. The sand and water drop into a trough where the sand receives an additional scrubbing by being pulled up an incline from the bottom of this trough on scrapers attached to an endless chain. The dirty scrubbing water discharges from the opposite end of this trough and is conveyed to the other small stream. In this manner the two small streams provide an adequate supply of clean water and an outlet for the dirty water without the necessity of dams or other artificial devices. The washed materials are loaded from chutes into trip bottom buckets of  $1\frac{1}{4}$  cubic yards capacity which are conveyed on industrial tracks to the stock pile by a Burton Gas Locomobile. These buckets are then hoisted to the loading hopper or stock pile as the occasion may require. Five-ton trucks are used for transporting the materials in batch boxes to the mixer on the road. The belt conveyor and screens on this plant are electrically operated. Twelve (12) men are employed at the washery.

By adding to the above list of necessary items, Charles M. Reeves, Highway Material Inspector (better known as "Cappy"), and Mr. Staub himself, who maintains a close supervision over the plant, we have a very pleasing combination.

The contractors on this work are to be complimented upon their selection of the site, efficient design and operation of the plant, and the very commendable spirit of cooperation with the Laboratory which has existed throughout the season.

It has occurred to the writer that Mr. Staub has and

practices an expression which very ably typifies the spirit mentioned above. It is, "Well, gotta do it—gotta do it, that's all."

For considerable of the descriptive matter and the pictures submitted herewith, we are indebted to Mr. Charles M. Reeves.



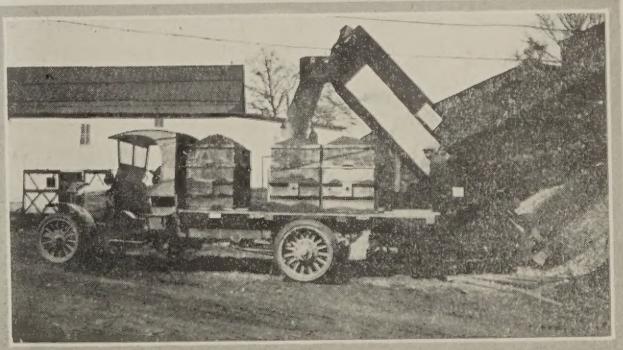
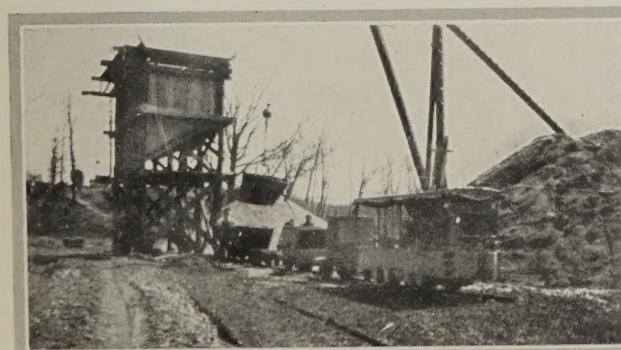
## Gasoline Reserve Stocks

Gasoline reserve stocks in the United States are the largest in the history of the country, and are growing at a much faster ratio than domestic consumption, according to figures compiled by H. J. Lowe petroleum economist of the Bureau of Mines, at the request of A. A. A. officials. The present stocks, on which figures were compiled at the end of the first quarter of 1922, were 854,232,000 gal. which was greater by 20 per cent than for the first quarter of 1921 and 36 per cent greater than for the first quarter of 1920.

While the consumption of gasoline has increased it showed only seven per cent more used in the first quarter of 1922 than for the first quarter of 1921 and only 25 per cent more than the first quarter of 1920. Thus, in spite of the increasing number of cars, A. A. A. officials point out, the stocks of gasoline are increasing still more rapidly.

With these figures at hand, it has been hard to understand the reason for the rise in the price of gasoline, which has increased from four to five cents a gallon during the first three months of the year. Knowing that each increase of one cent in the price of gasoline means an additional bill of \$50,000,000 for the motorists of America, A. A. A. officials have been working diligently to obtain an official investigation which would at least give a reason for the advance.

So far the first tangible result of these efforts has been the issuance of a questionnaire by the Senate Manufacturers Committee which has been sent to every oil company and which is designed to show where the increase originated. This Committee, which is headed by Senator



And this shows the loading hopper and method of transferring material from industrial trucks to hopper or stock pile. (Right) Gasoline loader transferring material from stock pile at siding to batch boxes on trucks ready to go to the job.

# The Highwayman

## SOUTHERLY TO

NEWARK	---	12 MILES
ELIZABETH	--	18 MILES
RAHWAY	---	24 MILES
SHORE RESORTS		



## SOUTHWESTERLY FROM RAHWAY

NEW BRUNSWICK	35 MILES	
TRENTON	---	62 MILES
CAMDEN	---	96 MILES

Here's one of the new signs that are being placed at important points on the State Highway System; the color bands shown in left of sign correspond to the color bands painted on poles along the respective route.

Mr. H. C. Shinn,  
Editor-in-Chief, *The Highwayman*  
Trenton, N. J.

June 19, 1922.

Dear Sir:

I read with much interest your publication "The Highwayman" which comes to me every month or so, but was particularly attracted in the last issue to your article on the illuminated signs which have been appearing at numerous places along our main roadways. I think every automobile will agree with you that their utility outweighs any objection there might be to the advertising carried and they are certainly far ahead of the outrageous bill boards that disfigure our highways, and which I hope will soon be outlawed.

Permit me to suggest, in the interest of our roads that you urge also the necessity of keeping the highways clean. The party that picnics along the road and starts off leaving behind a mess of papers and discarded lunch ought to get a summons and pay a fine only a little less generous than the man who deliberately throws a glass bottle out of his car. In my opinion there should be an association formed of autoists who pledge themselves to do everything in their power, personally and by a campaign among their fellow drivers, to see that the highways are kept clean. It should not be the work of the state to do this, but of the individual, who ought to take a pride in his roads.

I wish something might also be done with the "hot dog" and refreshment houses along the roads. Some of them are disgraceful in appearance and certainly not attractive to one who might be tempted otherwise to stop for a bite. A little paint and ordinary cleanliness would go far towards remedying this condition. Possibly such matters would properly come under the care of some state automobile association, but in any event the observance of common decency in these cases would make our roads more attractive.

Wishing you all success I am,

Very truly yours,  
J. Herbert Pearsall,  
527 Carlton Road,  
Westfield, N. J.

June 24, 1922.

Mr. J. Herbert Pearsall,  
527 Carlton Road,  
Westfield, N. J.

Dear Sir:

Your letter of June 19 with comments on the monthly publication issued by the Department known as the High-

wayman was received with considerable pleasure. We appreciate expressions of opinion regarding the work of the Department, either constructive criticism or commendation.

The first enables us to see our shortcomings and the second encourages us to further efforts. You will be interested to know that the Department has ruled that no refreshment booths, gasoline stations or objectionable advertising matter be constructed within the right of way width of the highways. We are powerless to control the matter of structures erected outside the right of way width of the highway, and as you suggest in your letter our only hope of improving these conditions is through publicity.

You will greatly assist us in giving the matter publicity by allowing us to use your name in this connection and we, therefore, request permission to print your letter in a future issue of the Highwayman.

Very truly yours,  
T. J. Wasser,  
State Highway Engineer.

June 30, 1922.

Mr. T. J. Wasser,  
State Highway Engineer  
Trenton, N. J.

Dear Sir:

I am in receipt of your letter of June 24, requesting to use my name in connection with some comments I made on road matters and while I am not anxious to rush into print, if you think the remarks made will produce any effect or start someone else thinking, you are at liberty to publish the letter or such parts of it that you may deem of value.

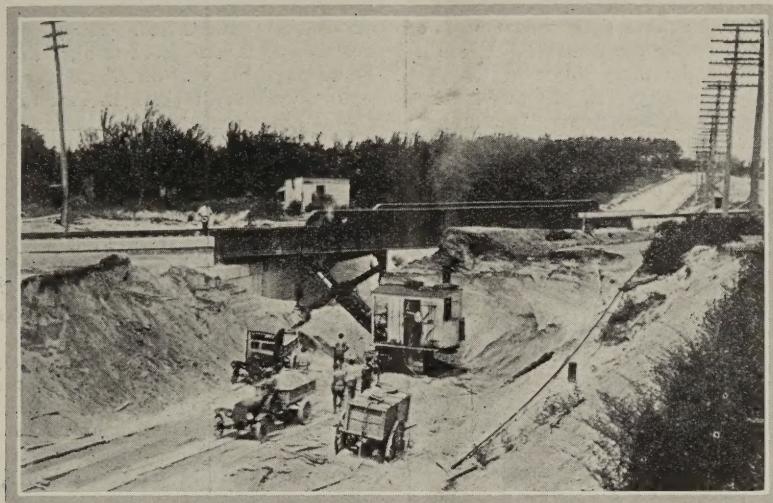
Another matter that I have had in mind to write about was the deplorable lack of road signs in some of the leading towns along state or other important highways. I noted while touring New York state last Fall that in almost every city the main route would be so plainly marked that it was almost impossible to go astray. In many of the Jersey towns important turns on the main thoroughfares are poorly marked, often by signs high up on buildings, so small as to be read with difficulty. My idea of such markings is that they should be uniform as to size everywhere and so plain that "he who runs may read." Also the time will come when every town must have an entering and leaving sign bearing the name of the town.

Thanking you for your very kind letter I am,  
Very truly yours,

J. Herbert Pearsall.  
(Continued on page 10)

# of New Jersey

7



*Another grade crossing eliminated! This time it is the one on Route 6 just north of Bridgeton. It is now open for traffic.*

## Along Your Highways

*Under this heading is presented each month a description of the conditions along one or more of the main roads of the state. If you drive a car, you will be interested in following this series.*

Route No. 2, from Trenton to Camden is the important trunk line traversing the State from the Delaware River to the Hudson River, connecting at Trenton with the Lincoln Highway (State Highway Route No. 13) and State Highway Route No. 1. The Inter-State traffic which prefers to follow the Jersey side by crossing at the Camden or Palmyra Ferries, uses this route. There has been a good pavement between the City Line of Trenton and White Horse for several years. From White Horse southerly to the Mercer County Line, Crosswicks Creek, however, a steep grade and bad alignment combined with the drainage conditions naturally found under such circumstances have made it very difficult to maintain the bituminous treated macadam road.

The contract for the improvement of this section has been let by Mercer County under the reimbursement plan, to Daniel Klockner. The length of this section is four-tenths of a mile and is known as Route No. 2, Section 3-A. The completion of this project will eliminate a very bad condition.

From Crosswicks Creek to the Mercer-Burlington County line, the macadam pavement is paralleled by a trolley line, and is very difficult to maintain under the very heavy traffic to which it is subject, due to difficult drainage conditions, partly caused by the obstruction to proper drainage offered by the trolley road.

Wherever a trolley line is located on the side of a high-

way route and adequate drainage has not been provided for when the road was originally constructed, a serious drainage problem presents itself, because it is not practical to dig a ditch at the edge of the pavement adjacent to the trolley road, because of the danger it would present to the traveling public and the fact that it would narrow the road to a considerable extent. On the other hand, it would not be practical to undertake an elaborate system of under-drainage and surface drainage, such as would be required to properly take care of surface and sub-soil water, until funds are available to undertake the work as a construction project, at which time suitable hard surface pavement will be laid, after the drainage conditions have been made right.

Our reason for giving such possibly uninteresting details is to acquaint the users of the roads with some of the conditions that must be encountered, in the maintenance of old roads; possibly answering questions which come to people traversing these roads, who wonder why it is necessary for the maintenance forces to constantly be resurfacing and patching the roadway, it being both a source of annoyance and inconvenience to the traveling public and an expense to the Highway Department.

From Bordentown southerly to Burlington, a few years ago, there existed an unimproved road which was not capable of carrying traffic to which it was being subjected, necessitating considerable increase in the distance traveled



*Going north from Bridgeton on Route 6. One of the most interesting sights is the new Koster Nursery just south of Deerfield, where roses and many other ornamental plants are being grown by the hundreds of thousands.*

# The Highwayman

between Camden and Trenton. We have "Before" and "After" pictures, several of which have been shown heretofore in the Highwayman, showing the contrast between the old unimproved road and the magnificent highway which now exists between these two points. In this issue will be shown additional "Before" and "After" pictures, illustrating this great improvement.

In the April Issue on page 6 we showed photographs of the Kinkora Bridge, constructed over a deep ravine and a branch of the Pennsylvania Railroad. This bridge together with the approach fills, is one of the notable pieces of construction along this route. From Burlington southerly to Camden, the bituminous treated macadam pavement is being maintained and is in excellent shape, due to the efforts of the Maintenance forces.

The addition of a spur to Route No. 2, extending from what is known as Five Points, to the Palmyra Ferry, by the Legislature last year, has necessitated the construction of about six-tenths of a mile of sheet asphalt pavement on a macadam base, from the Palmyra Railroad Station to the Palmyra Ferry; and the scarifying and reshaping of the existing macadam pavement, between the Palmyra Station and Five Points.

With the completion of this maintenance project another outlet to the Pennsylvania shore has been provided through the Palmyra-Tacony Ferry. This ferry makes accessible the New Jersey shore opposite all that section of the country north of Philadelphia, without the necessity of traveling southerly through Philadelphia and crossing to Camden and thence northerly again to the portion of New Jersey, it is desired to reach.

Since the completion of the pole banding, it has been an never-ending source of convenience to the writer in following the course of the various routes, particularly through towns and cities. This is strikingly demonstrated in going through Camden. By simply memorizing the four different designations of the colors, one may pick up his route with certainty and follow it with ease.

Route No. 6. Following the brown pole bands from the heart of Camden or the Camden ferries, one proceeds southwesterly along a well maintained road to Woodbury, where recently completed hard surface modern pavement comes into view. Between Camden and Woodbury, considerable new guard rail of the post and cable type is being constructed by the State Labor Division of the Highway Department.

Just south of Camden considerable low-land exists on both sides of the road, which has made the construction on a considerable fill necessary. This has always been a

source of more or less danger, without it being properly protected by guard rail. The particular type of guard rail referred to is considered to offer the greatest protection, because the cable will distribute any shock which it receives, over the adjacent posts, in case of failure of any one post. This type of guard fence has been in existence and tried long enough to demonstrate the practicability of this idea. It also of necessity has considerable more resiliency than wooden guard rail fence.

Supervisor of State Labor Tom George and his forces are handling this work in a very creditable manner, it being one of those jobs particularly adapted to floating forces employed by the Highway Department.

In going by this work we observed all the fellows from the State Labor Division attending strictly to their knitting and the work seemed to be progressing satisfactorily.

The concrete pavement from Woodbury to Mullica Hill which has been completed about three years is standing up in very good shape and is an never-ending source of satisfaction to its users.

On the Salem leg of Route No. 6, we find newly completed hard surfaced pavement, from Mullica Hill to Woodstown and from Woodstown to Collier's Run, about five miles north of Salem. The Collier's Run-Salem, Section 9, Route No. 6, should be completed early in the fall.

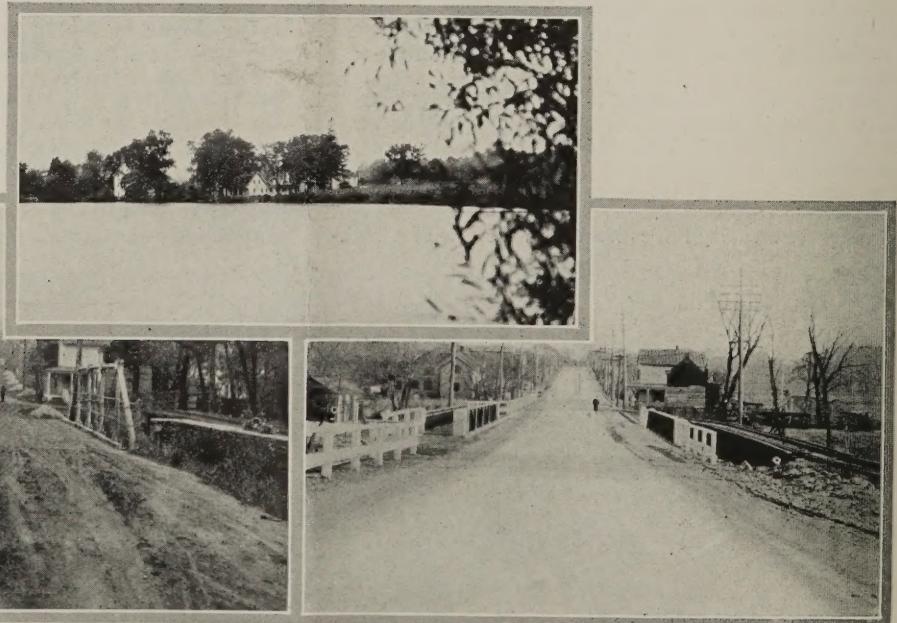
From Salem to Quinton a distance of about 2.7 miles work, is under construction by Joseph F. Burke, contractor, and should be completed very soon. Continuing toward Bridgeton from Quinton to Marlboro, a distance of about six miles, contract has been let to the Masterson Construction Company. This job includes heavy grading and a concrete pavement. It is hoped the work will be completed during this construction season. Plans are under preparation for a section from Marlboro to Bridgeton.

On the leg of Route No. 6, from Bridgeton to Mullica Hill, with the exception of the connection between Routes 6 and 15 through the City of Bridgeton the pavement is completed northerly to Shirley, and is under construction from Shirley to Mullica Hill.

All of this should be completed and open to traffic early in the fall.

The photo at left, page 9, shows the Calyx Core Drill at work on Route No. 6 near Pole Tavern. Charles McCabe, with the assistance of William McGurk and George Sullivan, are taking a sample core from the newly laid pavement for the purpose of testing same for thickness and quality.

The newly cut core is raised from the hole by raising



(Above) Scenes such as this, on the detour between Shirley and Pole Tavern, Route 6, greatly offset the inconvenience of detouring. (Left) Route 2, Section 2, just south of Bordentown before the new bridge was put in and —(Right) the same spot after the new bridge was finished.

up the drill, after which it is dislodged from the drill by gently tapping with a hammer, and caught on a shovel as shown in the picture at the right.

The upper photograph on the bottom of this page shows method of plugging up the hole from which the core was taken. This is done by imbedding a portion of a pre-cast core in neat cement, top of core being flush with the surface of the surrounding pavement, after which neat cement is carefully rammed in around the core as shown in the accompanying photograph.

When the paving work is completed on this route, it will greatly facilitate marketing farm products from this rich farm country, acting as a trunk line for the many roads that empty their traffic upon the State Highway.

One can form an idea of the enormous possibilities in the development of farm land, with consequent lower cost of farm products to the consumer, by the construction of good roads, when riding over a section of the country given over to the production of farm products.

It is known to be a fact that construction of these roads has had a decided effect on real estate values and not only will it affect values of the land which lies along the highways, but all the land fronting on contributing roads, which join the main highway, comparatively short distances apart, enabling Mr. Gardener to truck his produce more readily to the point of consumption or to the nearest railroad siding.



## Cross Drain Construction on Concrete Roads

The usual practice in the construction of cross drains has been to construct the drains before the concrete road was placed, and then make the concrete road meet the drain. There are several weak points in this method. First, it doesn't make any difference how careful the Engineer is in laying out the culvert, it usually turns out a little too high or a little too low. A quarter of an inch difference in elevation between the road and the cross drain is apparent when riding over it. Second, when the construction is such that the cross drain is supposed to conform to the crown of the road, it is almost impossible to get the same crown on both the pavement and cross

drain, as the template used for bringing the roadway to its proper crown is about the last thing to be brought on the job. When the job is stretched out over two or three miles, and several cross drains are under construction at one time everybody wants the template at the same time. Third, by constructing the cross drain before the pavement is laid, it is necessary to put in a joint on each side of the cross drain. These joints placed a few feet apart do not improve the appearance of the pavement nor do they tend to make the riding any smoother.

To eliminate these undesirable features the following method has proved successful on small cross drains.

Construct the bottom and sides of the proposed cross drain leaving the top off where the pavement crosses it. The top of the sides of the cross drain are brought to the elevation of the sub-grade. Two inch planks placed on braces of 2x4s on 2 foot centers, so that the planks are level with the top of the drain. Over the planks is placed a layer of tar paper to prevent the concrete from leaking through.

This permits the pavement to be cast over the cross drain in a monolithic slab, eliminating any differences in elevation, a difference in the crown and two construction joints. Extra reinforcement is usually placed over the drain, making two layers of wire mesh or reinforcing bars at this point.

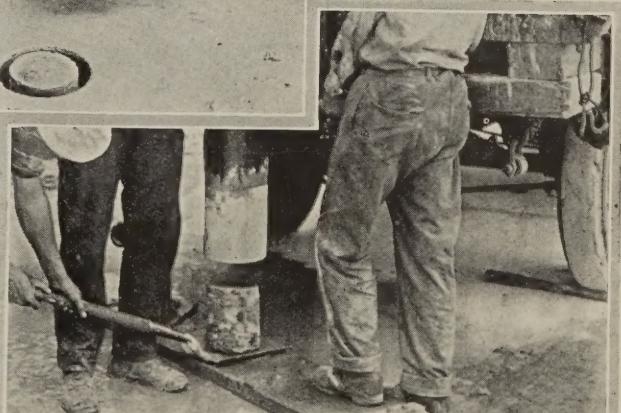
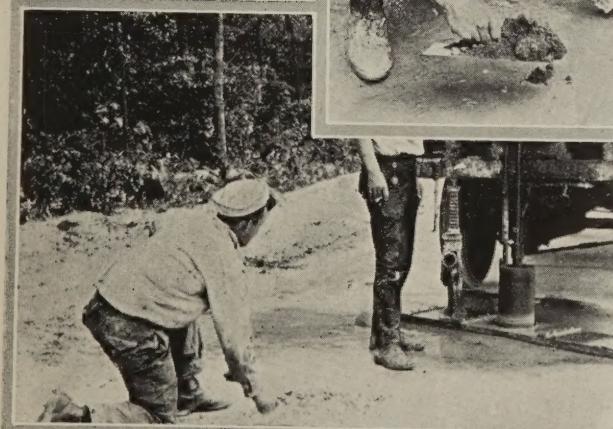
After the concrete pavement is set, an iron bar a little over half the width of the pavement in length with a hook on it will dislodge the 2x4 braces holding up the two inch planks. The planks can then be removed very easily.

In order to eliminate the possibility of cracks, the bottom and sides of the cross drain should be laid at least 21 days before the pavement is put on it, as to allow time for shrinkage and settlement of the cross drain.

### Iron Plates on Cross Drains

Where iron plates are used the same general method can be pursued as in a reinforced concrete cross drain, except only the bottom is put in. The forms for the sides are then placed and the plates put on the top of the form. Concrete is then grouted around the plates giving the plates a firmer bearing than it can possibly hope to get when the entire form is cast and plates fitted afterwards.

Louis L. COUDERT, JR.,  
Asst. Engineer, Board of Chosen Freeholders,  
Union County, N. J.



Here is that Calyx Core Drill, about which you have been reading, in action. At the left you see it drilling a core from the recently constructed concrete road. At the right the core is being removed and at the top the hole is being plugged with a pre-cast core which will be held in place by cement. The core taken out is sent to the laboratories for testing.

# The Highwayman

(Continued from Page 6)

Mr. J. Herbert Pearsall,  
527 Carlton Road,  
Westfield, N. J.

July 7, 1922.

Dear Sir:

We wish to thank you for your communication of June 30, in which you extend your permission to use your previous letter in some future issue of the Highwayman. The further subject contained in your letter of June 30, regarding the marking of points with adequate signs is noted and we beg to advise you that this matter has been under consideration for sometime by the Department. You will note from previous issues of the Highwayman that the routes are being marked with color bands denoting the direction in which they go.

This painting will be followed up by appropriate signs. For instance at the Weehawken Ferries a large sign will be erected showing a section of pole with a representation of a blue band thereon and the words, southerly to Newark, 12 miles; Elizabeth, 18 miles; Rahway, 24 miles; shore re-

sorts. Under this on the same sign appears a representation of a pole with a brown band with the words, southwesterly from Rahway; New Brunswick, 35 miles; Trenton, 62 miles; Camden, 96 miles. It is planned to erect such signs at the beginning and ending points and all intersections of highway routes and at such other important points as may be decided upon. A description of this will appear in a later issue of the Highwayman.

By expressing frankly your views on such matters you will help us to know what information the public desires or it may give us an entirely new idea that it would be hard for us to secure otherwise.

Thanking you again for your interest and courtesy.

Very truly yours,  
T. J. Wasser,  
State Highway Engineer.



"Business only goes where it is invited and stays only where it is well treated."

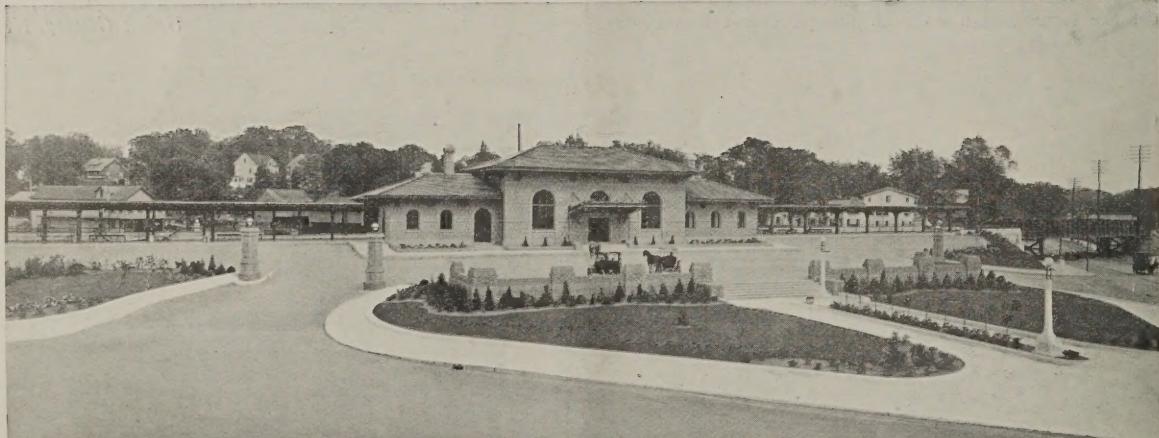
## Who Pays for Our Roads?

This question was asked this week by Mr. H. W. Slauson in *Leslie's* and he proceeded to answer with facts that will be of especial interest to state highway officials. "Ask this question," writes Mr. Slauson, "of some of our benighted legislators, and the answer will be, practically nothing; ask it of an automobile owner and he will say, all of it—two or three times over; ask it of a statistician and he will tell you that the total tax on automobiles and parts (including license fees) amounted to nearly double the maintenance costs of the entire road system of the country. And so the automobile owner is right!"

"Such a statement as that made by the above-mentioned statistician may surprise the average conservative motorist whose fifteen to thirty dollars a year State License fee on his passenger car may seem like a small proportion of his share of road maintenance cost. It is a fact, however, that the Federal Excise Tax on passenger cars, trucks, accessories, parts and tires, amounted to nearly \$120,000,000; the State license fees to another \$125,000,000, and personal property taxes on motor vehicles brought the total to nearly \$340,000,000 for the year 1921. During that period the total maintenance cost of the highways of our country was \$180,000,000. This left balance obtained from the motorcar industry of approximately \$160,000,000 which could have been applied to the construction of new highways.

"The fact that the balance of this money was not so applied but that it was diverted into other channels from which the motor vehicle owner receives no exclusive benefit, represents one of the glaring faults of our present system of taxation."

Notwithstanding the fact that the motor vehicle is now contributing so much to the development of the country—Congress continues to squirm, haggle and twist over the proposition to put motor vehicle revenue back where it economically belongs—into road construction.—*Highway News Digest*.



D. L. & W. R. R Plaza, Morristown, N. J. Paved with Amiesite.

## Ride on Amiesite

the economical and durable bituminous pavement. ECONOMICAL because it is easily laid and maintained. DURABLE because of its resilient and wear-resisting qualities.

Roads paved with Amiesite have withstood traffic for years without repairs.

Our plants have a capacity of one-half million yards of pavement annually.

Manufactured by the

**NORTH JERSEY AMIESITE COMPANY**

MAIN OFFICE.  
17 SOUTH ST., MORRISTOWN, N.J.

# of New Jersey



In front of Seaview Golf Club, near Atlantic City, (Route 4)

## Warrenite—Bitulithic Pavements Have Stood Up Under Heavy Traffic For 15 Years

The test of the paving is in the riding—and the cost of upkeep.  
Upon either of these points we invite your critical investigation.  
Some of the oldest paved roads in New Jersey were laid under the Warren  
patents.  
Many of these have been in constant use *under heavy traffic* for fifteen years.  
They are still in excellent condition.

*"The Best Road You Can Buy Is the Cheapest in the End."*

**Warren Bros. Company**  
District Office 50 Church Street, New York City, N. Y.

## *The Delaware River Quarry & Construction Company*

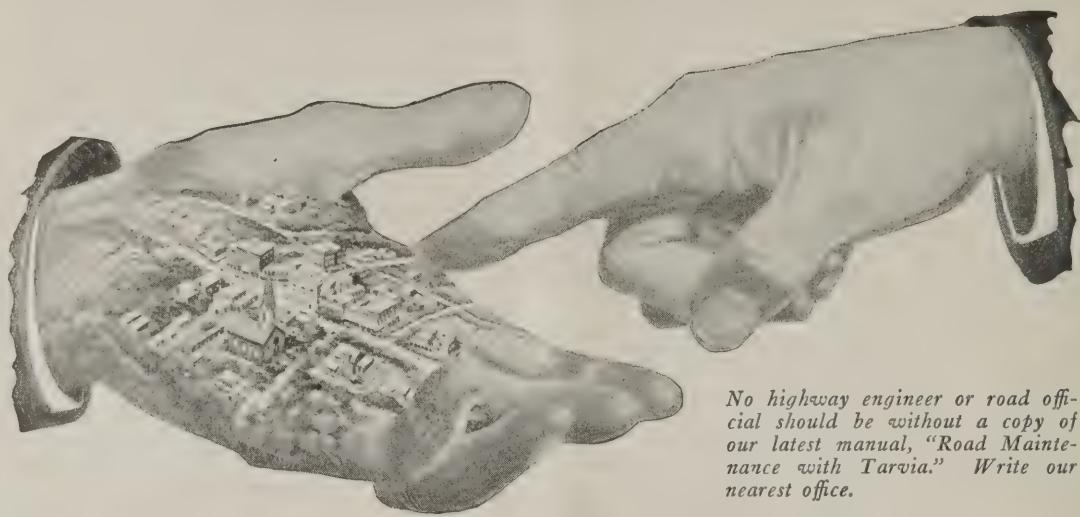
Largest Producers of Crushed Trap Rock  
in New Jersey

ESTABLISHED THIRTY YEARS

Main Office: 21 Bridge Street, Lambertville, N. J.

Branch Office  
National Bank Bldg., New Brunswick, N. J.

# The Highwayman



No highway engineer or road official should be without a copy of our latest manual, "Road Maintenance with Tarvia." Write our nearest office.

## The Future of a Community often lies in the Road Commissioner's hands -

Although the Road Commissioner never "heads the ticket" on Election Day, there are few public officials charged with duties more vital to the public welfare.

Good roads are indispensable to the progress and happiness of every community. With good roads, getting to town is made a matter of minutes—not miles; business flourishes, hauling costs decrease, property values rise, children enjoy the benefits of a central graded school, community and social life is broadened and made more enjoyable. The future holds forth great promise.

Throughout the county our engineers have demonstrated to thou-

sands of public-spirited road officials the great saving resulting from a definite policy of Tarvia construction and maintenance.

This popular road material is unequalled for building new roads, for resurfacing worn-out macadam, for repairing and maintaining improved roads of every type. Special grades are made for specific uses.

Tarvia roads are an indispensable part of every Good Roads Program. They are comparatively low in first cost, and are so much more economical over a term of years that the saving makes a more extensive road program possible.

**Tarvia**  
For Road Construction  
Repair and Maintenance

The *Barrett* Company  
40, RECTOR STREET, NEW YORK CITY

C. A. Baker, Jr., . . . No. 323, Closter  
H. M. Smith, . . . No. 96M, Riverton  
C. C. Randolph, . . No. 2466, Plainfield  
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# of New Jersey

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## STRENGTH and UNIFORMITY

*For Information and Prices—Write*

**The Lawence Cement Co.**

302 Broadway, New York, N. Y.

SERVICE

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## Concrete Roads Add Years to Your Car's Life

Dust, mud and splatter, the rack and strain on the mechanism from bad roads, all cause rapid depreciation from the day you start driving.

Concrete hard-surfaced roads are clean, dustless, even, firm and skid-proof in all kinds of weather. They add years to your car's life—help to keep it at top value for service, exchange or sale.



*Our Booklet R-3 tells other interesting things  
about Concrete Roads. Write for your copy.*

**PORLTAND CEMENT ASSOCIATION**

347 Madison Avenue, New York

*A National Organization to Improve and Extend the Uses of Concrete*  
Offices in 23 Other Cities

# The Highwayman

## GLUTRIN

### Four Reasons Why All Gravel Roads Should Be Treated With Glutrin

First: Glutrinized gravel roads are hard all the year round.

Second: Glutrinized roads shed water—and for that reason they do not rut up during the winter and Spring.

Third: Glutrin is the best binder yet discovered for gravel stone, sand-clay, or slag or earth roads.

And finally: Glutrin is not only the best binder, but by far the most economical.

### *What Local Authorities Think of Glutrin Road Binder:*

*Taken from the Daily Pioneer of Bridgeton, N. J., Tuesday, February 14, 1922*

#### " SHOWS VALUE "

"Last fall the state highway department caused west Commerce street to be flushed with glutrin, an oil-like preparation which has for its object the laying of the dust and preventing the gravel on the roads from being cut up with the traffic. The glutrin application also has had the effect of giving the street a surface which turned

much of the water, and the results show a very much improved condition this winter. While most of the gravel streets are soft with mud, west Commerce street is comparatively firm and free from mud, and much smoother in consequence. The experiment would seem to indicate that the glutrin application greatly improves dirt roads."

Glutrin has been manufactured by us in our own plants for over 15 years. We have our own tank car line in which to deliver the product. The material used in New Jersey was applied by Mr. M. R. Young, Trenton, N. J., with pressure distributors especially built to handle this product.

Send us your name, and let us put you next to Glutrin!

**Robeson Process Company**  
Fifth Avenue Building, 200 Fifth Avenue, New York

# of New Jersey

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(Courtesy Portland Cement Association)

## When Vulcan Made 'em, They Lasted Forever

Vulcan was the blacksmith of the Gods on high Olympus.

The things he forged in his mighty smithy lasted forever.

Neither time nor tempest, age nor rust, could

destroy their everlastingness!

In that, they were similar to roads built of "Vulcanite"—the cement that is made in our giant plant at Warren Co., N. J., with its capacity of 2,000,000 barrels a year.

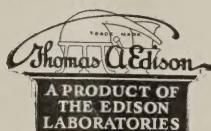
*"Let's get together and talk Cement!"*

## VULCANITE PORTLAND CEMENT CO.

PHILADELPHIA

BOSTON

NEW YORK



## "EDISON"

The Word that means "Cement Satisfaction"

Why not put your cement troubles up to Edison?

Why fret and worry and lose money on slow deliveries, when we can ship your order the same day as received?

Do you realize that Edison Cement is produced right here in New Jersey; and that we can ship 150 carloads a day?

*"Edison service Cement when you want it!"*

## EDISON PORTLAND CEMENT CO.

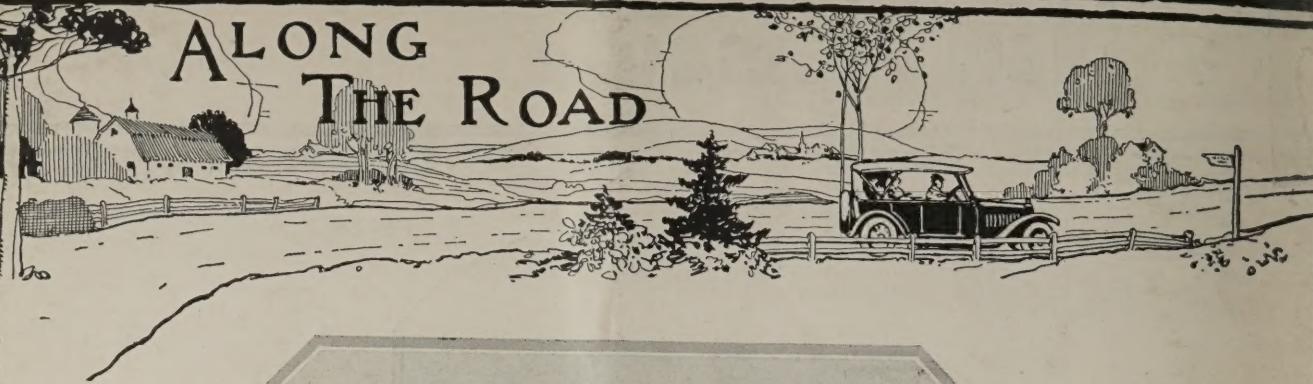
NEW YORK

BOSTON

PHILADELPHIA

PLANT: NEW VILLAGE, N. J.

# ALONG THE ROAD



*Isn't this worth taking a little trip from the main road to see? You will find this spot along the south branch of the Raritan River near Clinton, New Jersey.*

## Some Mottos for Motorists

*As you honk along the Highways in the bracing autumn air,  
And encounter fellow motorists galore,  
Keep these helpful little hint-thoughts in the void beneath  
your hair,  
And use one each time you find you're feeling sore.*

*To wear a cheerful countenance at all times and give  
every living creature you meet a smile.*

*To be so strong that nothing can disturb your peace of  
mind.*

*To talk health, happiness and prosperity to every person  
you meet.*

*To make all your friends see that there is something in  
them.*

*To look at the sunny side of everything and make your  
optimism come true.*

*To think only of the best, work only for the best, expect  
only the best.*

*To give so much time to the improvement of yourself  
that you have no time to criticise others.*

*To be too large for worry, too noble for anger, too  
strong for fear and too happy to permit the presence of  
trouble.*

## Touring Time!

This is the month!

New roads completed, "detour" signs down; cool days, clear nights, and the splendor of autumn's glory spreading from the valleys to the hillsides, and giving even old scenes a new and transcendent beauty.

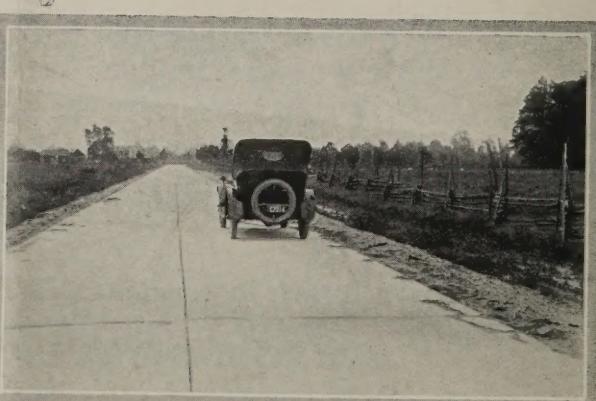
Tune up the old bus! Get out the tent, and the camp stove, and—if only for a day or two at a time—"follow the gypsy trail!"



## The Changing Times!

People used to commit suicide by blowing out the gas.  
Now they step on it.

Out West a man burned his wife's clothes to keep her from running around. No one noticed the difference.—*Allith Bulletin.*



*"Before" and "after" on Route 6, near Pole Tavern. This road was formerly one of the worst in this section of the country, owing to poor drainage conditions.*